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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/224,401	12/31/1998	SRINATH HOSUR	TI-28734	3730

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EXAMINER	
NGUYEN, HANH N	
ART UNIT	**PAPER NUMBER**
2662	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/224,401	HOSUR ET AL.	
	Examiner	Art Unit	
	Hanh Nguyen	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed on 3/07/05*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-21 and 29-45* is/are allowed.

6)☒ Claim(s) *1-5,7-16 and 22-27* is/are rejected.

7)☒ Claim(s) *6 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

HANH NGUYEN
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the magnitude" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitations "the magnitude" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1 and 22 are rejected under 35 USC 102(e) as being anticipated by Huang et al. (Pat. 6,373,832 B1).

Regarding claims 1 and 22, Hoang et al. discloses, in fig.1A, a circuit (fig.1A, receiver 41) comprising a measurement circuit (Fig.1A, comprising searcher 35 searching for received signals, col.3, lines 30-33) coupled to receive a first input signal from a first antenna of a transmitter and coupled to receive a second input signal from a second antenna of the transmitter (receiving separated signals from separate antennas 14-16 of a remote transmitter 12, col.4, lines 40-55) and each of the first and second input signals being transmitted at a first time (signals transmited simultaneously, see col. 4, lines 50-55). The measurement circuit (detail described in Fig.3, searcher 35) produces an output signal (output from squarer 86 which estimates received energy) corresponding to at least one of the first and second input signals (number of received signals are summed by summer 87). A control circuit (Fig.3, combination of threshold circuit 88 and counter 89) coupled to receive the output signal and a reference signal (Fig.3, receving input from sumer 87 and compares the received energy to a threshold), the control circuit (Fig.3, combination of circuit 88 and counter 89) produces a control signal (producing exceed energy as control information fed back to the remote transmitting station) at a second time in response to a comparison of the output signal and the reference signal (See col.6, lines 1-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2-5, 7, 8, 10, 11, 23 and 24 are rejected under 35 USC 103(a) as being unpatentable over Huang et al. (Pat. 6,373,832 B1) in view of Dobrica (Pat. 6,070,086).

Regarding claim 2, Huang et al. discloses separate signals are transmitted from separate antennas using CDMA method, but does not explicitly disclose the transmitted signals comprising pilot symbol. Dobrica disclose pilot symbols inserted in signals to be transmitted (Fig.1, col.5, lines 21-26). Therefore, it would have been obvious to one skilled in the art to have pilot symbols in the transmitted signal from a remote transmitter.

Regarding claim 3, Huang et al. discloses that each of the first and second input signals is a wideband code division multiple access signal (see Abstract).

Regarding claim 4, Huang et al. discloses that the output signal comprises a sum of the magnitude of each of the first and second input signals (see Fig.3, input to summer 87, col.6, lines 1-15), and wherein the control signal (Fig.3, control signal output from counter 89, col.6, lines 1-15) comprises at least one transmit power control signal (see col.6, lines 1-15).

Regarding claim 5, as explained by the rejection of claim 3, Huang et al. further discloses the output signal (Fig.3, input signal to summer 87) comprises a first output signal and a second output signal (first signal from antenna 14 and second signal from antenna 15) corresponding to a magnitude of the first input signal and the second output signal (output signal from summer 87), and wherein the control signal (Fig.3, control signal from counter 89 comprises at least one transmit power control signal (see col.6, lines 1-15).

Regarding claims 7 and 23, Huang et al. does not disclose all the claimed limitations. Dobrica discloses an estimate circuit (Fig.3, combination of estimators103-105) coupled to receive at least a first predetermined signal and a second predetermined signal (Fig.3, pilot symbols) from the transmitter source, each of the first and second predetermined signals having respective predetermined values (see col.6, lines 65 to col.7, line 20), the estimate circuit (Fig. 3, estimators 103-105) producing the first estimate signal (Fig.3, output of estimator 103) and the second estimate signal (Fig.3, output of estimator104) in response to the first and second predetermined signals (Fig.3, pilot symbols). See col.10, line 65 to col.11, line 15. Therefore, it would have been obvious to one ordinary skilled to combine the teachings of Dobrica into Huang et al. in order to determine exceed signal which is fed back to remote transmitter for adjusting power.

Regarding claim 8, the limitation of this claim has been addressed in claim 2.

Regarding claim 10, Huang et al. does not disclose the first and second estimate signals are Rayleigh Fading parameter. Dobrica disclose the first and second estimate signals is a Rayleigh fading parameter estimate (see col.4, lines 37-48).

Regarding claim 11, Huang et al. does not disclose a total path diversity of the first and second symbols estimates is at least twice a number of transmitting antennas. Dobrica discloses total path diversity of each of the first and second symbol (Fig.1, reference M) estimates is at least twice a number of transmitting antennas; see col.6, lines 1-5.

Regarding claim 24, Huang et al. discloses that at least one control signal (Fig.3, signal output from counter 89) comprises at least one transmit power control signal (control signal, see col.6, lines 1-15).

4. Claims 25-27 are rejected under 35 USC 102(e) as being anticipated by Greenstein et al. (Pat. 6,131,016).

Regarding claim 25, Greenstein et al. discloses receiving at a feedback receiver 220 (Fig. 2A,) at least one control signal transmitted from an external source (terminal 20 in Fig.1) at a first time (see col.3, line 64 to col.4, line 4); producing at processor 230 (Fig. 2A) a transmit power level corresponding to at least one of plurality of antennas (Fig.2A, antennas 15 and 16) in response to the control signal (see col.3, lines 15-20, lines 49-55); and transmitting a plurality of signals to the external source (Fig.1, terminal 20) at a respective said transmit power level at a second time from a respective said plurality of antennas (see col.4, lines 1-10).

Regarding claim 26, Greenstein et al. discloses that at least one control signal comprises at least one transmit power control signal (see col.4, lines 1-10).

Regarding claim 27, Greenstein et al. teaches that the transmit power level has the same transmit power adjustment for each of said plurality of antennas (Fig.2A, antennas 15 and 16) in response to one transmit power control signal. (See col.3, lines 12-20).

5. Claims 9 and 12-16 are rejected under 35 USC 103(a) as being unpatentable over Huang et (U.S Pat. 6,070,086).

Regarding claim 9, Huang et al. does not teach that the measurement circuit, the control circuit and the estimate circuit are formed on a single integrated circuit. A single integrated circuit is simply an IC chip widely used the art. Therefore, it would have been obvious to one ordinary skill in the art to implement the measurement circuit, the control circuit and the estimate circuit of Dobrica on an IC chip because the use of IC chips results in small and compact circuits, as is common practice in the art.

Regarding claim 12, Huang et al. does not disclose that the measurement circuit is coupled to receive a third input signal from a third antenna and a fourth input signal from a fourth antenna of the transmitter. However, to use third and fourth antennas would have been obvious to one of ordinary skill in the art because more antennas would provide more replicas of information signals for better receptions when the channel was in a deep fade; thereby, overcoming large attenuation. This result was entirely expected.

Regarding claim 13, the limitation of this claim has been addressed in claim 2.

Regarding claim 14, the limitation of this claim has been addressed in claim 3.

Regarding claim 15, Huang et al. discloses that the output signal (Fig.3, output from summer 87) corresponds to a sum of magnitudes of the input signals (See col.6, lines 1-15).

Regarding claim 16, Huang et al. discloses that the control signal (Fig.3, output from counter 89) comprises at least one transmit power control signal (see col.6, lines 1-15).

Allowable Subject Matter

6. Claims 6 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 17-21 and 29-45 are allowed.

Response to Arguments

Applicant's arguments with respect to claims 1-5, 7-16 and 22-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hottinen et al. (Pat. 6584161 B2) discloses transmit diversity and power control system.

Kitade et al. (US Pat. 6,522,639 B1 and 6,545,991 B1) discloses Transmission/Reception Apparatus and Transmit Power Control Method.

Yun (Pat. 6,463,295 B1) discloses Power control with signal quality estimation for smart antenna communication system.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday-Friday, from 8AM to 6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh Nguyen
Primary Examiner

HANH NGUYEN
PRIMARY EXAMINER